

What is claimed is:

1. A laser irradiation method comprising the steps of:
irradiating a first laser beam from a front surface of a substrate on which a member
to be irradiated is formed; and

5 irradiating a second laser beam from a rear surface of the substrate,
wherein the second laser beam is a part of the first laser beam which has penetrated
the member to be irradiated and the substrate and is reflected by a reflecting member.

2. A laser irradiation method comprising the steps of:
10 disposing a reflecting member on a rear surface side of a substrate on which a
member to be irradiated is formed;

irradiating a first laser beam from a front surface of the substrate; and
irradiating a second laser beam from a rear surface of the substrate,
wherein the second laser beam is a part of the first laser beam which has penetrated
15 the member to be irradiated and the substrate and is reflected by the reflecting member.

3. A laser irradiation method comprising the steps of:
irradiating a first laser beam from a front surface of a substrate on which a member
to be irradiated is formed; and

20 irradiating a second laser beam from a rear surface of the substrate,
wherein the second laser beam is a part of the first laser beam which has penetrated
the member to be irradiated and the substrate and is reflected by a reflecting member,
wherein the substrate and the reflecting member are irradiated while relatively
moving with respect to the first laser beam and the second laser beam.

4. A laser irradiation method comprising the steps of:

disposing a reflecting member on a rear surface side of a substrate on which a member to be irradiated is formed;

5 irradiating a first laser beam from a front surface of the substrate; and

irradiating a second laser beam from a rear surface of the substrate,

wherein the second laser beam is a part of the first laser beam which has penetrated the member to be irradiated and the substrate and is reflected by the reflecting member,

wherein the substrate and the reflecting member are irradiated while relatively moving with respect to the first laser beam and the second laser beam.

5. A laser irradiation method comprising the steps of:

irradiating a first laser beam from a front surface of a substrate on which a member to be irradiated is formed; and

15 irradiating a second laser beam from a rear surface of the substrate,

wherein the second laser beam is a part of the first laser beam which has penetrated the member to be irradiated and the substrate and is reflected by a reflecting member,

wherein the substrate is irradiated while relatively moving with respect to the first laser beam, the second laser beam and the reflecting member.

20 6. A laser irradiation method comprising the steps of:

disposing a reflecting member on a rear surface side of a substrate on which a member to be irradiated is formed;

irradiating a first laser beam from a front surface of the substrate; and

irradiating a second laser beam from a rear surface of the substrate,
wherein the second laser beam is a part of the first laser beam which has penetrated
the member to be irradiated and the substrate and is reflected by the reflecting member,
wherein the substrate is irradiated while relatively moving with respect to the first
5 laser beam, the second laser beam and the reflecting member.

7. A laser irradiation method according to claim 1, wherein a surface of the
reflecting member on which the first laser beam is reflected is a curved surface.

10 8. A laser irradiation method according to claim 2, wherein a surface of the
reflecting member on which the first laser beam is reflected is a curved surface.

15 9. A laser irradiation method according to claim 3, wherein a surface of the
reflecting member on which the first laser beam is reflected is a curved surface.

10. A laser irradiation method according to claim 4, wherein a surface of the
reflecting member on which the first laser beam is reflected is a curved surface.

20 11. A laser irradiation method according to claim 5, wherein a surface of the
reflecting member on which the first laser beam is reflected is a curved surface.

12. A laser irradiation method according to claim 6, wherein a surface of the
reflecting member on which the first laser beam is reflected is a curved surface.

13. A laser irradiation method according to claim 1, wherein wavelengths of the first laser beam and the second laser beam each are 350 nm or more.

14. A laser irradiation method according to claim 2, wherein wavelengths of the first laser beam and the second laser beam each are 350 nm or more.

15. A laser irradiation method according to claim 3, wherein wavelengths of the first laser beam and the second laser beam each are 350 nm or more.

16. A laser irradiation method according to claim 4, wherein wavelengths of the first laser beam and the second laser beam each are 350 nm or more.

17. A laser irradiation method according to claim 5, wherein wavelengths of the first laser beam and the second laser beam each are 350 nm or more.

18. A laser irradiation method according to claim 6, wherein wavelengths of the first laser beam and the second laser beam each are 350 nm or more.

19. A laser irradiation method according to claim 1, wherein the first laser beam is a laser beam emitted from one selected from the group consisting of a solid laser, a gas laser and a metal laser.

20. A laser irradiation method according to claim 2, wherein the first laser beam is a laser beam emitted from one selected from the group consisting of a solid laser, a gas laser

and a metal laser.

21. A laser irradiation method according to claim 3, wherein the first laser beam is
a laser beam emitted from one selected from the group consisting of a solid laser, a gas laser
5 and a metal laser.

22. A laser irradiation method according to claim 4, wherein the first laser beam is
a laser beam emitted from one selected from the group consisting of a solid laser, a gas laser
10 and a metal laser.

23. A laser irradiation method according to claim 5, wherein the first laser beam is
a laser beam emitted from one selected from the group consisting of a solid laser, a gas laser
and a metal laser.

24. A laser irradiation method according to claim 6, wherein the first laser beam is
a laser beam emitted from one selected from the group consisting of a solid laser, a gas laser
and a metal laser.

25. A laser irradiation method according to claim 1, wherein the first laser beam is
emitted from at least one selected from the group consisting of a YAG laser, a YVO₄ laser, a
YLF laser, a YAlO₃ laser, a glass laser, a ruby laser, an alexandrite laser and a Ti:sapphire
laser of continuous oscillation type or pulse oscillation type.

26. A laser irradiation method according to claim 2, wherein the first laser beam is emitted from at least one selected from the group consisting of a YAG laser, a YVO₄ laser, a YLF laser, a YAlO₃ laser, a glass laser, a ruby laser, an alexandrite laser and a Ti:sapphire laser of continuous oscillation type or pulse oscillation type.

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27. A laser irradiation method according to claim 3, wherein the first laser beam is emitted from at least one selected from the group consisting of a YAG laser, a YVO₄ laser, a YLF laser, a YAlO₃ laser, a glass laser, a ruby laser, an alexandrite laser and a Ti:sapphire laser of continuous oscillation type or pulse oscillation type.

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28. A laser irradiation method according to claim 4, wherein the first laser beam is emitted from at least one selected from the group consisting of a YAG laser, a YVO₄ laser, a YLF laser, a YAlO₃ laser, a glass laser, a ruby laser, an alexandrite laser and a Ti:sapphire laser of continuous oscillation type or pulse oscillation type.

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29. A laser irradiation method according to claim 5, wherein the first laser beam is emitted from at least one selected from the group consisting of a YAG laser, a YVO₄ laser, a YLF laser, a YAlO₃ laser, a glass laser, a ruby laser, an alexandrite laser and a Ti:sapphire laser of continuous oscillation type or pulse oscillation type.

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30. A laser irradiation method according to claim 6, wherein the first laser beam is emitted from at least one selected from the group consisting of a YAG laser, a YVO₄ laser, a YLF laser, a YAlO₃ laser, a glass laser, a ruby laser, an alexandrite laser and a Ti:sapphire laser of continuous oscillation type or pulse oscillation type.

31. A laser irradiation method according to claim 1, wherein the first laser beam is emitted from one selected from the group consisting of an excimer laser, an Ar laser, a Kr laser and a CO₂ laser of continuous oscillation type or pulse oscillation type.

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32. A laser irradiation method according to claim 2, wherein the first laser beam is emitted from one selected from the group consisting of an excimer laser, an Ar laser, a Kr laser and a CO₂ laser of continuous oscillation type or pulse oscillation type.

33. A laser irradiation method according to claim 3, wherein the first laser beam is emitted from one selected from the group consisting of an excimer laser, an Ar laser, a Kr laser and a CO₂ laser of continuous oscillation type or pulse oscillation type.

34. A laser irradiation method according to claim 4, wherein the first laser beam is emitted from one selected from the group consisting of an excimer laser, an Ar laser, a Kr laser and a CO₂ laser of continuous oscillation type or pulse oscillation type.

35. A laser irradiation method according to claim 5, wherein the first laser beam is emitted from one selected from the group consisting of an excimer laser, an Ar laser, a Kr laser and a CO₂ laser of continuous oscillation type or pulse oscillation type.

36. A laser irradiation method according to claim 6, wherein the first laser beam is emitted from one selected from the group consisting of an excimer laser, an Ar laser, a Kr laser and a CO₂ laser of continuous oscillation type or pulse oscillation type.

37. A laser irradiation method according to claim 1, wherein the first laser beam is emitted from one selected from the group consisting of a helium cadmium laser, a copper-vapor laser and a gold-vapor laser of continuous oscillation type or pulse oscillation
5 type.

38. A laser irradiation method according to claim 2, wherein the first laser beam is emitted from one selected from the group consisting of a helium cadmium laser, a copper-vapor laser and a gold-vapor laser of continuous oscillation type or pulse oscillation
10 type.

39. A laser irradiation method according to claim 3, wherein the first laser beam is emitted from one selected from the group consisting of a helium cadmium laser, a copper-vapor laser and a gold-vapor laser of continuous oscillation type or pulse oscillation
15 type.

40. A laser irradiation method according to claim 4, wherein the first laser beam is emitted from one selected from the group consisting of a helium cadmium laser, a copper-vapor laser and a gold-vapor laser of continuous oscillation type or pulse oscillation
20 type.

41. A laser irradiation method according to claim 5, wherein the first laser beam is emitted from one selected from the group consisting of a helium cadmium laser, a copper-vapor laser and a gold-vapor laser of continuous oscillation type or pulse oscillation

type.

42. A laser irradiation method according to claim 6, wherein the first laser beam is emitted from one selected from the group consisting of a helium cadmium laser, a copper-vapor laser and a gold-vapor laser of continuous oscillation type or pulse oscillation type.

43. A laser irradiation method according to claim 1, wherein the first laser beam is converted into harmonic by a nonlinear optical element.

44. A laser irradiation method according to claim 2, wherein the first laser beam is converted into harmonic by a nonlinear optical element.

45. A laser irradiation method according to claim 3, wherein the first laser beam is converted into harmonic by a nonlinear optical element.

46. A laser irradiation method according to claim 4, wherein the first laser beam is converted into harmonic by a nonlinear optical element.

47. A laser irradiation method according to claim 5, wherein the first laser beam is converted into harmonic by a nonlinear optical element.

48. A laser irradiation method according to claim 6, wherein the first laser beam is converted into harmonic by a nonlinear optical element.

49. A method of manufacturing the semiconductor device comprising the steps of:
irradiating a first laser beam from a front surface of a substrate on which a
semiconductor film is formed; and

5 irradiating a second laser beam from a rear surface of the substrate,
wherein the second laser beam is a part of the first laser beam which has penetrated
the semiconductor film and the substrate and is reflected by a reflecting member.

50. A method of manufacturing the semiconductor device comprising the steps of:
10 disposing a reflecting member on a rear surface side of a substrate on which a
semiconductor film is formed;

irradiating a first laser beam from a front surface of the substrate; and

irradiating a second laser beam from a rear surface of the substrate,

15 wherein the second laser beam is a part of the first laser beam which has penetrated
the semiconductor film and the substrate and is reflected by the reflecting member.

51. A method of manufacturing the semiconductor device comprising the steps of:
irradiating a first laser beam from a front surface of a substrate on which a
semiconductor film is formed; and

20 irradiating a second laser beam from a rear surface of the substrate,

wherein the second laser beam is a part of the first laser beam which has penetrated
the semiconductor film and the substrate and is reflected by a reflecting member,

wherein the substrate and the reflecting member are irradiated while relatively
moving with respect to the first laser beam and the second laser beam.

52. A method of manufacturing the semiconductor device comprising the steps of:
disposing a reflecting member on a rear surface side of a substrate on which a
semiconductor film is formed;

5 irradiating a first laser beam from a front surface of the substrate; and
irradiating a second laser beam from a rear surface of the substrate,
wherein the second laser beam is a part of the first laser beam which has penetrated
the semiconductor film and the substrate and is reflected by the reflecting member,
wherein the substrate and the reflecting member are irradiated while relatively
10 moving with respect to the first laser beam and the second laser beam.

53. A method of manufacturing the semiconductor device comprising the steps of:
irradiating a first laser beam from a front surface of a substrate on which a
semiconductor film is formed; and

15 irradiating a second laser beam from a rear surface of the substrate,
wherein the second laser beam is a part of the first laser beam which has penetrated
the semiconductor film and the substrate and is reflected by a reflecting member,
wherein the substrate is irradiated while relatively moving with respect to the first
laser beam, the second laser beam and the reflecting member.

20 54. A method of manufacturing the semiconductor device comprising the steps of:
disposing a reflecting member on a rear surface side of a substrate on which a
semiconductor film is formed;

irradiating a first laser beam from a front surface of the substrate; and

irradiating a second laser beam from a rear surface of the substrate,

wherein the second laser beam is a part of the first laser beam which has penetrated the semiconductor film and the substrate and is reflected by the reflecting member,

wherein the substrate is irradiated while relatively moving with respect to the first laser beam, the second laser beam and the reflecting member.

55. A method of manufacturing a semiconductor device according to claim 49, wherein wavelengths of the first laser beam and the second laser beam each are 350 nm or more.

56. A method of manufacturing a semiconductor device according to claim 50, wherein wavelengths of the first laser beam and the second laser beam each are 350 nm or more.

57. A method of manufacturing a semiconductor device according to claim 51, wherein wavelengths of the first laser beam and the second laser beam each are 350 nm or more.

58. A method of manufacturing a semiconductor device according to claim 52, wherein wavelengths of the first laser beam and the second laser beam each are 350 nm or more.

59. A method of manufacturing a semiconductor device according to claim 53, wherein wavelengths of the first laser beam and the second laser beam each are 350 nm or

more.

60. A method of manufacturing a semiconductor device according to claim 54,
wherein wavelengths of the first laser beam and the second laser beam each are 350 nm or
5 more.

61. A method of manufacturing a semiconductor device according to claim 49,
wherein the first laser beam is a laser beam emitted from one selected from the group
consisting of a solid laser, a gas laser and a metal laser of continuous oscillation type or pulse
10 oscillation type.

62. A method of manufacturing a semiconductor device according to claim 50,
wherein the first laser beam is a laser beam emitted from one selected from the group
consisting of a solid laser, a gas laser and a metal laser of continuous oscillation type or pulse
15 oscillation type.

63. A method of manufacturing a semiconductor device according to claim 51,
wherein the first laser beam is a laser beam emitted from one selected from the group
consisting of a solid laser, a gas laser and a metal laser of continuous oscillation type or pulse
20 oscillation type.

64. A method of manufacturing a semiconductor device according to claim 52,
wherein the first laser beam is a laser beam emitted from one selected from the group
consisting of a solid laser, a gas laser and a metal laser of continuous oscillation type or pulse

oscillation type.

65. A method of manufacturing a semiconductor device according to claim 53,
wherein the first laser beam is a laser beam emitted from one selected from the group
5 consisting of a solid laser, a gas laser and a metal laser of continuous oscillation type or pulse
oscillation type.

66. A method of manufacturing a semiconductor device according to claim 54,
wherein the first laser beam is a laser beam emitted from one selected from the group
10 consisting of a solid laser, a gas laser and a metal laser of continuous oscillation type or pulse
oscillation type.

67. A method of manufacturing a semiconductor device according to claim 49,
wherein the first laser beam is emitted from at least one selected from the group consisting of
15 a YAG laser, a YVO₄ laser, a YLF laser, a YAlO₃ laser, a glass laser, a ruby laser, an
alexandrite laser and a Ti:sapphire laser of continuous oscillation type or pulse oscillation
type.

68. A method of manufacturing a semiconductor device according to claim 50,
20 wherein the first laser beam is emitted from at least one selected from the group consisting of
a YAG laser, a YVO₄ laser, a YLF laser, a YAlO₃ laser, a glass laser, a ruby laser, an
alexandrite laser and a Ti:sapphire laser of continuous oscillation type or pulse oscillation
type.

69. A method of manufacturing a semiconductor device according to claim 51,
wherein the first laser beam is emitted from at least one selected from the group consisting of
a YAG laser, a YVO₄ laser, a YLF laser, a YAlO₃ laser, a glass laser, a ruby laser, an
alexandrite laser and a Ti:sapphire laser of continuous oscillation type or pulse oscillation
5 type.

70. A method of manufacturing a semiconductor device according to claim 52,
wherein the first laser beam is emitted from at least one selected from the group consisting of
a YAG laser, a YVO₄ laser, a YLF laser, a YAlO₃ laser, a glass laser, a ruby laser, an
alexandrite laser and a Ti:sapphire laser of continuous oscillation type or pulse oscillation
10 type.

71. A method of manufacturing a semiconductor device according to claim 53,
wherein the first laser beam is emitted from at least one selected from the group consisting of
15 a YAG laser, a YVO₄ laser, a YLF laser, a YAlO₃ laser, a glass laser, a ruby laser, an
alexandrite laser and a Ti:sapphire laser of continuous oscillation type or pulse oscillation
type.

72. A method of manufacturing a semiconductor device according to claim 54,
20 wherein the first laser beam is emitted from at least one selected from the group consisting of
a YAG laser, a YVO₄ laser, a YLF laser, a YAlO₃ laser, a glass laser, a ruby laser, an
alexandrite laser and a Ti:sapphire laser of continuous oscillation type or pulse oscillation
type.

73. A method of manufacturing a semiconductor device according to claim 49, wherein the first laser beam is emitted from at least one selected from the group consisting of an excimer laser, an Ar laser, a Kr laser and a CO₂ laser of continuous oscillation type or pulse oscillation type.

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74. A method of manufacturing a semiconductor device according to claim 50, wherein the first laser beam is emitted from at least one selected from the group consisting of an excimer laser, an Ar laser, a Kr laser and a CO₂ laser of continuous oscillation type or pulse oscillation type.

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75. A method of manufacturing a semiconductor device according to claim 51, wherein the first laser beam is emitted from at least one selected from the group consisting of an excimer laser, an Ar laser, a Kr laser and a CO₂ laser of continuous oscillation type or pulse oscillation type.

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76. A method of manufacturing a semiconductor device according to claim 52, wherein the first laser beam is emitted from at least one selected from the group consisting of an excimer laser, an Ar laser, a Kr laser and a CO₂ laser of continuous oscillation type or pulse oscillation type.

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77. A method of manufacturing a semiconductor device according to claim 53, wherein the first laser beam is emitted from at least one selected from the group consisting of an excimer laser, an Ar laser, a Kr laser and a CO₂ laser of continuous oscillation type or pulse oscillation type.

78. A method of manufacturing a semiconductor device according to claim 54,
wherein the first laser beam is emitted from at least one selected from the group consisting of
an excimer laser, an Ar laser, a Kr laser and a CO₂ laser of continuous oscillation type or
pulse oscillation type.

79. A method of manufacturing a semiconductor device according to claim 49,
wherein the first laser beam is emitted from at least one selected from the group consisting of
a helium cadmium laser, a copper-vapor laser and a gold-vapor laser of continuous oscillation
type or pulse oscillation type.

80. A method of manufacturing a semiconductor device according to claim 50,
wherein the first laser beam is emitted from at least one selected from the group consisting of
a helium cadmium laser, a copper-vapor laser and a gold-vapor laser of continuous oscillation
type or pulse oscillation type.

81. A method of manufacturing a semiconductor device according to claim 51,
wherein the first laser beam is emitted from at least one selected from the group consisting of
a helium cadmium laser, a copper-vapor laser and a gold-vapor laser of continuous oscillation
type or pulse oscillation type.

82. A method of manufacturing a semiconductor device according to claim 52,
wherein the first laser beam is emitted from at least one selected from the group consisting of
a helium cadmium laser, a copper-vapor laser and a gold-vapor laser of continuous oscillation

type or pulse oscillation type.

83. A method of manufacturing a semiconductor device according to claim 53,
wherein the first laser beam is emitted from at least one selected from the group consisting of
5 a helium cadmium laser, a copper-vapor laser and a gold-vapor laser of continuous oscillation
type or pulse oscillation type.

84. A method of manufacturing a semiconductor device according to claim 54,
wherein the first laser beam is emitted from at least one selected from the group consisting of
10 a helium cadmium laser, a copper-vapor laser and a gold-vapor laser of continuous oscillation
type or pulse oscillation type.

85. A method of manufacturing a semiconductor device according to claim 49,
wherein the first laser beam is converted into harmonic by a nonlinear optical element.
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86. A method of manufacturing a semiconductor device according to claim 50,
wherein the first laser beam is converted into harmonic by a nonlinear optical element.

87. A method of manufacturing a semiconductor device according to claim 51,
20 wherein the first laser beam is converted into harmonic by a nonlinear optical element.

88. A method of manufacturing a semiconductor device according to claim 52,
wherein the first laser beam is converted into harmonic by a nonlinear optical element.

89. A method of manufacturing a semiconductor device according to claim 53,
wherein the first laser beam is converted into harmonic by a nonlinear optical element.

90. A method of manufacturing a semiconductor device according to claim 54,
5 wherein the first laser beam is converted into harmonic by a nonlinear optical element.

91. A method of manufacturing a semiconductor device according to claim 49,
wherein the semiconductor device is at least one selected from the group consisting of: a
personal computer, a video camera, a mobile computer, a goggle type display, a player using a
10 recording medium, a digital camera, a projector, a portable phone and a portable book.

92. A method of manufacturing a semiconductor device according to claim 50,
wherein the semiconductor device is at least one selected from the group consisting of: a
personal computer, a video camera, a mobile computer, a goggle type display, a player using a
15 recording medium, a digital camera, a projector, a portable phone and a portable book.

93. A method of manufacturing a semiconductor device according to claim 51,
wherein the semiconductor device is at least one selected from the group consisting of: a
personal computer, a video camera, a mobile computer, a goggle type display, a player using a
20 recording medium, a digital camera, a projector, a portable phone and a portable book.

94. A method of manufacturing a semiconductor device according to claim 52,
wherein the semiconductor device is at least one selected from the group consisting of: a
personal computer, a video camera, a mobile computer, a goggle type display, a player using a

recording medium, a digital camera, a projector, a portable phone and a portable book.

95. A method of manufacturing a semiconductor device according to claim 53,
wherein the semiconductor device is at least one selected from the group consisting of: a
5 personal computer, a video camera, a mobile computer, a goggle type display, a player using a
recording medium, a digital camera, a projector, a portable phone and a portable book.

96. A method of manufacturing a semiconductor device according to claim 54,
wherein the semiconductor device is at least one selected from the group consisting of: a
10 personal computer, a video camera, a mobile computer, a goggle type display, a player using a
recording medium, a digital camera, a projector, a portable phone and a portable book.

97. A laser irradiation method according to claim 19, the first laser beam is a laser
beam of continuous oscillation type or pulse oscillation type.

98. A laser irradiation method according to claim 20, the first laser beam is a laser
beam of continuous oscillation type or pulse oscillation type.

99. A laser irradiation method according to claim 21, the first laser beam is a laser
20 beam of continuous oscillation type or pulse oscillation type.

100. A laser irradiation method according to claim 22, the first laser beam is a laser
beam of continuous oscillation type or pulse oscillation type.

101. A laser irradiation method according to claim 23, the first laser beam is a laser beam of continuous oscillation type or pulse oscillation type.

102. A laser irradiation method according to claim 24, the first laser beam is a laser
5 beam of continuous oscillation type or pulse oscillation type.

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